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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,155	03/17/2005	Shuichi Kubota	1207-114	2888
23117	7590	11/03/2005	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			MILLER, DANIEL H	
			ART UNIT	PAPER NUMBER

1775

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/528,155

Applicant(s)

KUBOTA ET AL.

Examiner

Daniel Miller

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date Ma. 17, 2005.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claims 1-2, 4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by (JP410101316A).
2. The reference teaches a heat resistant expanded graphite sheet (paragraph 0022-0024). Regarding claims 1 and 2, the graphite has organic phosphorous compounds, specifically phosphoric acids (0017). The graphite section can be 10 weight sections of phosphorous compounds (overlapping range) (paragraph 0019 of translation). Regarding claim 4 and 7, the formulas of graphite phosphorous additives claimed by applicant in claims 4 and 7 are taught by the reference in formula 1 (see paragraph 0013 of translation).

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1775

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchings (U.S. 6,102,995) in view of Olstowski (U.S. 3,719,608).
3. Hutchings teaches a heat resistant expanded graphite sheet in which an organic phosphorous compound is dispersedly contained (as a coating or impregnated) (column 13 line 47-53). The phosphates, at high temperatures, are known to create a barrier coating around the expanded graphite plates minimizing the availability of oxidative attack (column 9 line 52-63). The general formulas depicted in applicant's claims 3 and 5-6 are depicted within the multiple embodiments of the reference (column 5-9).
4. Hutchings does not teach a weight proportion between 0.1 to 10% or the recited chemical formulas of claims 4, and 7.
5. Olstowski (U.S. 3,719,608) teaches the use of phosphates in a 0.5 to 10%wt in order to create an oxidation resistant expanded graphite sheet. Further, that greater than 10% created a problem with the physical properties of the graphite (column 5 line 15-40)).
6. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use between 0.5% to 10% by weight phosphorous, as taught by Olstowski, with the expectation that the claimed oxidative protection would occur. Hutchings teaches a wide variety of phosphorous groups that function in a substantially similar way. Absent evidence to the contrary with respect to the claimed compounds it would have been obvious to a person of ordinary skill in the art to vary an oxidative protective -R, -OH, or -H groups and still get a phosphoric acid with protective properties at high temperatures. No patentable distinction is seen.

Art Unit: 1775

7. Claims 3, 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over (JP410101316A).

8. The reference, discussed above, is silent as to the claimed structures of claims 3, 5-6.

9. However, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have anticipated the claimed structures to interact with the oxidative sites of the graphite and prevent oxidative attack in the same manner as the references disclosed phosphorous compounds. The reference teaches a wide variety of phosphorous groups that function in a substantially similar way. Absent a showing of criticality with respect to the claimed compounds it would have been obvious to a person of ordinary skill in the art to vary an oxidative protective -R, -OH, or -H groups and still get a phosphoric acid with protective properties at high temperatures. No patentable distinction is seen.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Miller whose telephone number is (571) 272-1534. The examiner can normally be reached on M-Th.

Art Unit: 1775

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel Miller



DEBORAH JONES  
SUPERVISORY PATENT EXAMINER